

CLAIMS

What is claimed is:

1. A vehicle comprising:

- at least one large annulate wheel with a large toroidal hub, and a correspondingly large toroidal axle joined to said vehicle to rotatably position and urge said large toroidal hub to effect rotatory movements of said large annulate wheel;**
- at least one fully closed toroidal rotor with magnetic and/or electromagnetic means of an electric motor, attached to or integrated with said large toroidal hub;**
- at least one stator with magnetic and/or electromagnetic means of said electric motor, attached to or integrated with said large toroidal axle;**
- at least one opening fully encircled by said fully closed toroidal rotor with magnetic and/or electromagnetic means of said electric motor, which is large enough to allow the entry and exit of a passenger of said vehicle, through said large toroidal axle;**
- a bearing means linked to said large toroidal hub and said large toroidal axle to decrease the friction between said large toroidal hub and said large toroidal axle during said rotatory movements of said large annulate wheel;**
- a source of electric power conducts through electrical and/or electronic processing unit or units to said electric motor to rotatably urge said electric motor which mechanically transfers torque to said large annulate wheel; and**
- at least one more of said large annulate wheel or any other wheel, placed at an axial distance from the first said large annulate wheel and linked rotatably to said vehicle, which is rotatably urged by a torque-giving power source.**

2. A vehicle in claim 1, wherein said stator with magnetic and/or electromagnetic means of said electric motor is semi-annular in axial profile.

3. A vehicle in accordance with claim 1, wherein said electric motor is a permanent-magnet ac motor with magnetic sensors positioned on said stator with magnetic and/or electromagnetic means of said electric motor.

4. A vehicle in accordance with claim 1, wherein an addition of a set of hook or hitch means on the rear end of said vehicle converts said vehicle into a traction vehicle.

5. A plurality of vehicles with each vehicle in accordance with claim 1, wherein the first said vehicle has an electronic communication link means to exchange data from said electrical and/or electronic processing unit or units of the first said vehicle with data from said electrical and/or electronic processing unit or units of another said vehicle, and so on, to effect the formation of an electronically linked enumeration of vehicles; and said electronically linked enumeration of vehicles movably steered by the manipulation of said data from said electrical and/or electronic processing unit or units of the first said vehicle, mainly at the discretion of said passenger of the first said vehicle.

6. A vehicle in accordance with claim 1, wherein said opening fully encircled by said fully closed toroidal rotor with magnetic and/or electromagnetic means of said electric motor has full or partial cover means hinged or linked movably to said large toroidal axle or to said vehicle.

7. A vehicle comprising:

at least one toroidal electric motor with the rotor and the stator of said toroidal electric motor forming toroidally;

said rotor of said toroidal electric motor angularly and fully encircling said stator of said toroidal electric motor, the curved exterior of said rotor of said toroidal electric motor having a ground-contact surface which permanently or occasionally remains in contact with the surface on which said vehicle travels;

said stator of said toroidal electric motor angularly and fully encircled by said rotor of said toroidal electric motor having opening means disposed in the area of the inner circle of the outer toroidal form of said toroidal electric motor, for passage of the occupant or occupants of said vehicle;

said stator of said toroidal electric motor linked with joining means to the body of said vehicle; and

at least one powered wheel.

8. A vehicle in accordance with claim 7, wherein said stator of said toroidal electric motor is semi-annular in axial profile.

9. A vehicle in accordance with claim 7, wherein said toroidal electric motor is a permanent-magnet ac motor with magnetic sensors positioned on said stator of said toroidal electric motor.

10. A vehicle in accordance with claim 7, wherein an addition of a set of hook or hitch means on the rear end of said vehicle converts said vehicle into a traction vehicle.

11. A vehicle in accordance with claim 7, wherein said vehicle has an electronic communication link means to exchange data of said toroidal electric motor of said vehicle with data of another toroidal electric motor fully identical to said toroidal electric motor of another vehicle fully identical to said vehicle, and so on, to form an electronically linked train of vehicles, each vehicle from said electronically linked train of vehicles fully identical to said vehicle.

12. A vehicle in accordance with claim 7, wherein said opening means fully encircled by said rotor of said toroidal electric motor has or have full or partial cover means hinged or movably linked to said stator of said toroidal electric motor or to the body of said vehicle.

13. A vehicle, the center of gravity of said vehicle in the ground-contacting half of the horizontal section of said vehicle; said vehicle comprising:

one large annulate wheel; said large annulate wheel comprising

- a large toroidal hub, and a correspondingly large toroidal axle joined to said vehicle to rotatably position and urge said large toroidal hub to effect rotatory movements of said large annulate wheel;**
- at least one full rotor with magnetic and/or electromagnetic means of an electric motor, attached to or integrated with said large toroidal hub;**
- at least one stator with magnetic and/or electromagnetic means of said electric motor, attached to or integrated with said large toroidal axle;**
- at least one opening always fully encircled by said full rotor with magnetic and/or electromagnetic means of said electric motor, which is large enough to allow the entry and exit of the passenger of said vehicle, through said large toroidal axle;**
- a bearing means linked to said large toroidal hub and said correspondingly large toroidal axle to decrease the friction between said large toroidal hub and said large toroidal axle during said rotatory movements of said large annulate wheel;**
- one more said large annulate wheel placed apart from the first said large annulate wheel near-coaxially,**
- a source of electric power connected by electrical and/or electronic connecting and processing units to each said electric motor on each said large annulate wheel, to rotatably urge each said electric motor which mechanically transfers a torque to each said large annulate wheel; and**
- seating means to allow the passenger or passengers of said vehicle to sit at will facing any of the two ends of said vehicle, conventionally defined as the front end and the rear end.**

14. A vehicle in accordance with claim 13, wherein said stator with magnetic and/or electromagnetic means of said electric motor is semi-annular in axial profile.

15. A vehicle in accordance with claim 13, wherein said electric motor is a permanent-magnet ac motor with magnetic sensors positioned on said stator with magnetic and/or electromagnetic means of said electric motor.

16. A vehicle in accordance with claim 13, wherein an addition of a set of hook or hitch means on the rear end of said vehicle converts said vehicle into a traction vehicle.

17. A vehicle in accordance with claim 13, wherein said vehicle has an electronic communication link means to exchange data from said electrical and electronic connecting and processing units of said vehicle with data from the electrical and electronic connecting and processing units of another vehicle, and so on, to form a linked train of vehicles; each vehicle from said linked train of vehicles is functionally identical with said vehicle and each of the electrical and electronic connecting and processing units is functionally identical with each of said electrical and electronic connecting and processing units.

18. A vehicle in accordance with claim 13, wherein said opening fully encircled by said full rotor with magnetic and/or electromagnetic means of said electric motor has full or partial cover means hinged or movably linked to said large toroidal axle or to said vehicle.